What is claimed is:

1.   A method of detecting a focal length which calls for:

obtaining, while changing the focal length of an optical system, multiple image data selected from among image data consisting of brightness data and a plurality of color data; and

calculating a focal length from the obtained multiple image data by using the peak value of contrast evaluated values of said multiple image data.

2.   A method of detecting a focal length as claimed in claim 1, wherein:

weighting of the evaluated values of each image data of each respective color data that has been selected is automatically performed based on conditions set for said each image data.

3.   A method of detecting a focal length as claimed in claim 1, wherein:

the operator performs by the operator's discretion weighting of the evaluated values of each image data of each respective color data that has been selected.

4.   A method of detecting a focal length as claimed in claim 1, wherein:

a photographing mode for calculating a focal length by using only image data that consists of color data of a specific

color selected based on a subject is provided.

5.   A method of detecting a focal length as claimed in any one of the claims from claim 1 to claim 4, wherein:

auxiliary light with given color data is emitted when the image data is obtained, and weighting of the evaluated values of the color image data is performed based on the color data of the emitted auxiliary light.

6.   A method of detecting a focal length as claimed in any one of the claims from claim 1 to claim 5, wherein:

the method calls for setting a plurality of image detecting areas adjacent to one another in each one of the obtained multiple image data, calculating a partial focal length for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in, calculating the reliability of each image detecting area based on the position at which said peak value has been recorded moving across the multiple image data, and

selecting a focal length from a group consisting of said partial focal lengths and at least one given focal length, said focal length selected based on the reliability and the evaluated values of each respective image detecting area.

7.   A focusing device including:

an image pickup device,

an optical system for forming an image on said image

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pickup device,

an optical system driving means for changing the focal length of said optical system, and

an image processing means for processing image data output from said image pickup device and controlling said optical system driving means, wherein:

the image processing means is adapted to:

while changing the focal length of said optical system, obtain multiple image data selected from among image data of brightness data and a plurality of color data, and

calculate a focal length from the obtained multiple image data by using the peak value of contrast evaluated values of said multiple image data.

8.   A focusing device as claimed in claim 7, wherein:

the focusing device is provided with an operating means which enables the operator to perform by the operator's discretion weighting of the evaluated values of each image data of each respective color data that has been selected.

9.   A focusing device as claimed in claim 7, wherein:

the image processing means is adapted to automatically perform weighting of the evaluated values of each image data of each respective color data that has been selected based on conditions set for said each image data.

10. A focusing device as claimed in any one of the claims from claim 7 to claim 9, wherein:

the focusing device is provided with an auxiliary light device for emitting light with given color data.

11. A focusing device as claimed in any one of the claims from claim 7 to claim 10, wherein:

the image processing means is adapted to:

set a plurality of image detecting areas adjacent to one another in each one of the obtained multiple image data, calculate a partial focal length for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in, calculate the reliability of each image detecting area based on the position at which said peak value has been recorded moving across the multiple image data, and

select a focal length from a group consisting of said partial focal lengths and at least one given focal length, said focal length selected based on the reliability and the evaluated values of each respective image detecting area.

12. An image capturing method which calls for:

using color data of a plurality of colors to detect a focal length for each respective color data and

capturing an image at each focal length detected

for each respective color data.

13. An image capturing method as claimed in claim 12, wherein:

a plurality of photographing modes can be selected, and

should a plurality of photographing modes be simultaneously selected, focal lengths are detected for each one of the selected photographing modes by using color data of a plurality of colors, and images are captured at the respected focal lengths that have been detected.

14. An image capturing method as claimed in claim 12 or claim 13, wherein:

focal length detection calls for:

obtaining a plurality of image data of each respective color data while changing the focal length of an optical system,

setting a plurality of image detecting areas adjacent to one another for the image data of each color data,

calculating a partial focal length for each image detecting area based on which image data the peak value of contrast evaluated values has been recorded in,

calculating the reliability of each image detecting area based on the position at which said peak value has been recorded moving across the multiple image data, and

selecting a focal length from a group consisting of said partial focal lengths and at least one given focal length, said focal length selected based on the reliability and the evaluated values of each respective image detecting area.

15. An image capturing apparatus including:

an image pickup device,

an optical system for forming an image on said image pickup device,

an optical system driving means for changing the focal length of said optical system, and

an image processing means for processing image data output from said image pickup device and controlling said optical system driving means, wherein:

the image processing means is adapted to:

obtain a plurality of image data of each respective color data while changing the focal length of said optical system, and

calculate a focal length for each respective color data mentioned above by using the peak value of contrast evaluated values calculated from the obtained multiple image data, and

perform image capturing at each focal length calculated for each respective color data.

16.   An image capturing apparatus as claimed in claim 15, wherein:

the apparatus is provided with a warning means for indicating that image capturing is underway.